```
%optimum alpha VS SNR for different values of eta
e1=exp(1);
prev='eta=';
alpha=1;
hold on;
fin = zeros(7,1);
for eta=0.25:0.25:0.75
k=1;
for snr_db= 0:5:30
snr= 10^(0.1*snr_db);
phi=eta*snr;
a=exp(lambertw((phi-1)/e1)+1);
alpha=(a-1)/(a-1+phi);
%display(k)
fin(k)=alpha;
%display(fin(k))
alpha=1;
k=k+1;
end
qw=0:5:30;
plot(qw,fin)
%set(gca,'Yscale','log')
title("Optimum Alpha Vs SNR for various values of Power efficiency
 eta")
xlabel( "SNR(db)")
ylabel( "Optimum Alpha")
legend(["eta=0.25","eta=0.5","eta=0.75"],'Location','best');
end
hold off;
```

```
Warning: Ignoring extra legend entries.
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```

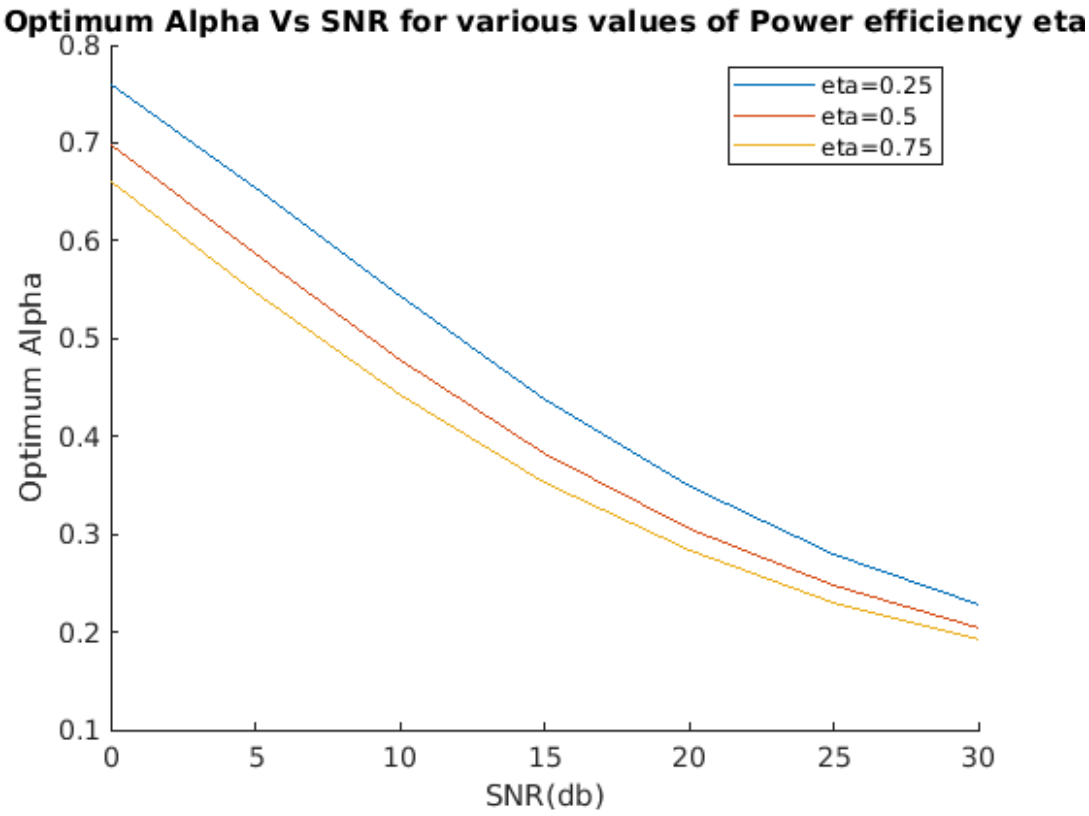

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